APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/692,433	10/19/2000	William Watson Tifft	051919-1120	6178

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EXAMINER
LIANG, GWEN

ART UNIT	PAPER NUMBER
2172	

DATE MAILED: 07/10/2003   8

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

		Application No		Applicant(s)	
Offic Action Summary		09/692,433		TIFFT, WILLIAM WATSON	
		Examiner		**Art Unit**	
		GWEN LIANG		2172	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondenc address --

Peri d for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>17 April 2003</u> .

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-21</u> is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-21</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>19 October 2000</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)   4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   5) ☐ Notice of Informal Patent Application (PTO-152)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .   6) ☐ Other:

DETAILED ACTION

1.   This action is responsive to communications: Amendment A, filed on 04/17/2003.

Claims 1-21 are pending. Claims 1 and 12 are independent claims.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neal et al.,

"Neal" (U.S. Patent No. 6,324,534), further in view of Yamazaki et al., "Yamazaki" (U.S. Patent

No. 5,204,939), and further in view of Megiddo et al., "Megiddo" (U.S. Patent No. 6,182,070).

With respect to claim 1, Neal teaches a method comprising the steps of:

implementing a plurality of search rules that include one or more data elements, wherein the

combination of data elements in each rule is configured to identify a target record (See for

example: Abstract, "The system accepts search terms from a user, and then executes a sequence

of search strategies on subsets of the database which may include a proximity search, a word

count search, and a fuzzy logic search."; col. 3 line 63 – col. 4 line 2, "According to the present

invention, a method of selecting data records in a catalog database comprises the following steps:

inputting search terms to a user interface; testing the search terms against a sequence of data sets

using search algorithms designated for each data set; and terminating the sequence of search

algorithms when at least one database record satisfied the search criteria."); and

retrieving a plurality of records identified by the search rules as possible matches to the

target record (See for example: Abstract, "The user can page through the list of displayed

matches");

However Neal does not explicitly disclose a method comprising: arranging the search

rules ...; executing the search rules according to the rank order ...; collecting a plurality of

statistical values ...; and adjusting the rank order ...

Yamazaki discloses a method comprising:

arranging the search rules in a rank order of execution; and executing the search rules

according to the rank order to retrieve the target record; (See for example: Abstract, "The

knowledge source blocks contain priority sequence tables in which the sequence of execution of

the rules is arranged and can be externally controlled."; col. 1 lines 7-13, "The present invention

relates to a rule base processing system wherein rules are described in a rule base by a rule

description language, and more particularly, to a rule base processing system in which rules in

the rule base are provided in knowledge source blocks of rules between which the sequence of

priority for execution can be changed."; col. 12 lines 15-22, "On the other hand, if the evaluation

sequence data does not indicate the rule number sequence, but rather indicates the application

condition, the evaluation sequence control means references the rule number sequence already

stored, extracts rules from the rule base in accordance with the sequence thereof and arranges

the rules in the execution sequence.");

collecting a plurality of statistical values related to the performance of each search rule

executed in attempt to locate the target record (See for example: col. 4 line 62 – col. 5 line 2,

wherein each case produces a numeral value, which illustrates the collection of statistical values

related to the performance of each search rule; col. 5 lines 24-44, wherein evaluation is carried

out by the procedure evaluation section for each detail rule.); and

adjusting the rank order of the search rules (See for example: col. 1lines 1-13, wherein

the sequence of priority for execution can be changed; col. 7 lines 26-29, "Instead, they are

executed and evaluated in accordance with the sequence defined in the relevant table 9 which

changes the priority depending on the rule number arrangement.".)

It would have been obvious to one having ordinary skill in the art at the time the

invention was made to incorporate a method of ranking search rules as disclosed by Yamazaki

into the method of implementing search rules as taught by Neal in order to allow changing the

evaluation sequence of the rules without changing the rule base itself to improve rule base

development efficiency (See for example: col. 2 lines 62-65) One of ordinary skill in the art

would be motivated to make the aforementioned combination with reasonable expectation of

success.

However the combination of Neal and Yamazaki does not explicitly disclose a method of

adjusting the rank order upon analysis of the collected statistics ....

Megiddo discloses a method of adjusting the rank order of the search rules upon analysis

of the collected statistics (See for example: col. 3 lines 31-36, wherein the system permits rules

to be ranked based on statistical significance.).

It would have been obvious to one having ordinary skill in the art at the time the

invention was made to incorporate a method of adjusting the rank order of the search rules upon

analysis of the collected statistics as disclosed by Megiddo into the method of adjusting the rank

order of the search rules as taught in the combination of Neal and Yamazaki to permit the user of

the system to view the most statistically significant association rules first (See for example: Abstract). One of ordinary skill in the art would be motivated to make the aforementioned combination with reasonable expectation of success.

Claim 2 is rejected for the reasons set forth hereinabove for claim 1 and furthermore Megiddo teaches a method wherein one of the collected statistical values corresponds to number of instances that a search rule is executed to search for the target record (See for example: col. 9 line 60 – col. 10-62).

Claim 3 is rejected for the reasons set forth hereinabove for claim 1 and furthermore Megiddo teaches a method wherein one of the collected statistical values corresponds to number of instances that a search rule retrieves one or more records as possible matches to the target record (See for example: col. 9 line 60 – col. 10-62).

Claim 4 is rejected for the reasons set forth hereinabove for claim 1 and furthermore Megiddo teaches a method wherein one of the collected statistical values corresponds to an elapsed time value equivalent to an amount of time spent executing a search rule to retrieve a record (See for example: col. 2 lines 46-60).

Claim 5 is rejected for the reasons set forth hereinabove for claim 1 and furthermore Megiddo teaches a method wherein one of the collected statistical values corresponds to a number of instances that a search rule retrieves a record previously retrieved by a previously executed search rule (See for example: col. 9 line 60 – col. 10-62).

Claim 6 is rejected for the reasons set forth hereinabove for claim 1 and furthermore Megiddo teaches a method wherein one of the collected statistical values corresponds to a

number of instances that a search rule retrieves a record that was not retrieved by a previously

executed search rule (See for example: col. 9 line 60 – col. 10-62).

Claim 7 is rejected for the reasons set forth hereinabove for claim 1 and furthermore

Megiddo teaches a method wherein one of the collected statistical values corresponds to a

number of instances that a search rule retrieves a plurality of records, wherein the plurality of

records acre subsequently determined to correspond to the target record (See for example: col. 9

line 60 – col. 10-62).

Claim 8 is rejected for the reasons set forth hereinabove for claim 1 and furthermore

Megiddo teaches a method wherein one of the collected statistical values corresponds to the

number of records of the plurality of retrieved records determined not to be the target record (See

for example: col. 3 lines 26-40; col. 7 lines 10-29).

Claim 9 is rejected for the reasons set forth hereinabove for claim 1 and furthermore

Megiddo teaches a method wherein the enterprise system determines the efficiency for each

search rule according to the collected statistics for the search rule, and wherein the rank order of

the search rules are arranged in descending order by efficiency (See for example: col. 3 lines 42-

57; col. 6 lines 58 – col. 7 line 9; col. 7 lines 30-52).

Claim 10 is rejected for the reasons set forth hereinabove for claim 1 and furthermore

Megiddo teaches a method wherein a user of the enterprise system determines the efficiency

based upon the collected statistics and arranges the rank order of the search rules according to the

determined efficiency (See for example: col. 3 lines 42-57; col. 6 lines 58 – col. 7 line 9).

Claim 11 is rejected for the reasons set forth hereinabove for claim 1 and furthermore

Megiddo teaches a method wherein the enterprise system and search rules are executed in a

computer (See for example: col. 3 lines 42-45).

Claims 12-21 are rejected on grounds corresponding to the reasons given above for

claims 1-10.

Response to Arguments

4.   Applicant's main arguments regarding claims 1-21 filed on 04/17/2003 have been fully

considered but they are not persuasive.

As per applicant's arguments, regarding that a search rule in Yamazaki is not a "search

rule executed in attempt to locate the target record." Instead, a search rule in Yamazaki et al. is

part of an expert system which solves problems, have been considered but are not persuasive.

Firstly, the search rules in Yamazaki are used to find a solution to a problem; in another word,

the solution being sought for is a target for search. Secondly, all the rules are stored in a rule

base and the solution that results from the execution of the rules is stored in the rule base in a

knowledge source; in another word, the solution itself is a record in the rule base, and thus the

target record. Therefore the Examiner maintains that a search rule in Yamazaki is a "search rule

executed in attempt to locate the target record.

As per applicant's arguments, regarding that Yamazaki discloses only a single "numeral

value" in selecting an optimum rule for execution, not a "plurality of statistical values" as recited

in claim 1, have been considered but are not persuasive. Yamazaki teaches that each of the detail

rules includes plural cases and each case produces a numeral value (col. 4 lines 62-63).

Furthermore, as per applicant's arguments, regarding that the "numeral value" disclosed in Yarnazaki is not a "statistical value" as recited in claim 1, have been considered but are not persuasive. Yamazaki teaches that the procedure evaluating section produces an evaluation value from each evaluation case, and the optimum procedure, for example, **the detail rule having the maximum (or minimum) evaluation value or result**, is selected by the procedure selecting section (col. 4 lines .63-68). The total value of each detail rule hence is a statistical value calculated based on the evaluation value from the plural cases belonging to a detail rule and the detail rule with the maximum (minimum) evaluation value or result is selected. Therefore the Examiner maintains that Yamazaki discloses a "plurality of statistical values" in selecting an optimum rule for execution, as recited in claim 1.

As per applicant's arguments, regarding that Megiddo fails to teach, suggest or disclose a "search rule executed in attempt to locate the target record.", have been considered but are not persuasive The association rules in Megiddo's data mining system are used to help, for example, the marketing people in targeting an itemset that a consumer would probably purchase based on what the consumer already purchased (col. 1 lines 14-43). The target itemset is analogous to a target record being searched for by the execution of the association rules, wherein these association rules are search rules since they are used to search for a target record. Therefore the Examiner maintains that Megiddo teaches a "search rule executed in attempt to locate the target record." as claimed in Applicant's invention.

Conclusion

5.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

Ellis et al., U.S. Patent 6,360,214: a method for automatic statistics creation comprising a

query optimizer which automatically generates statistics derived from data in a database and

selects an executable procedure from a plurality of procedures using the automatically generated

statistics.

Ellis, U.S. Patent 6,366,901: a system for automatically maintaining database statistics

comprises a query optimizer which automatically generates statistics derived from data in a

database and selects an executable procedure from a plurality of procedures that operate on data

in the database using the automatically generated statistics.

6.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing
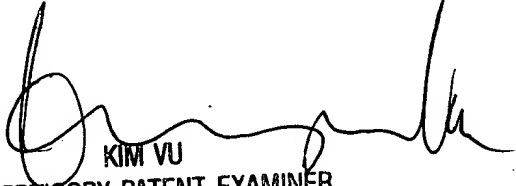
date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GWEN LIANG whose telephone number is 703-305-3985. The examiner can normally be reached on 9:00 A.M. - 5:30 P.M. Monday and Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, KIM VU can be reached on (703) 305-4393. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

G.L.
June 26, 2003

KIM VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100